Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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01-ERD-046

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Mr. Dennis Carlson
National Marine Fisheries Service
510 Desmond Dr. SE
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Department of Ecology
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Addressees:

ASBESTOS ABATEMENT PROJECT AT THE 181-N RIVER PUMPHOUSE

This letter serves as notification by the U.S. Department of Energy, Richland Operation Office (RL) to the above agencies of an upcoming project to remove asbestos from the 181-N River Pumphouse, located at the 100-N Reactor Area. Because the steelhead trout and spring-run Chinook salmon are listed as endangered species in the Hanford Reach of the Columbia River, it is appropriate to inform the National Marine Fisheries Service and the Washington State Department of Fish and Wildlife of projects that could have potential to impact these species and their habitats.

The 181-N River Pumphouse is located on the west side of the 100-N Reactor Complex and is adjacent to the Columbia River. The facility has approximately 712 cubic feet of nonradioactive asbestos containing material (ACM), mostly in the form of insulation on various pumps and pipes. All ACM is to be removed, packaged, and disposed of at the Environmental Restoration Disposal Facility. This scope of work is part of a Comprehensive Environmental Response, Compensation and Liability Act of 1980 cleanup action, and has been identified in the 100-N Area Ancillary Facilities Action Memorandum, dated January 6, 1999. The project is considered a waste site remediation activity that is briefly described in the U.S. Department of Energy

Hanford Site Threatened and Endangered Species Management Plan – Salmon and Steelhead (DOE/RL-2000-27, Rev. 0). A review of the ecological impacts from this project concludes that the asbestos abatement project will not affect endangered spring Chinook salmon, steelhead, or their habitats.

Attachment 1 is the Asbestos Abatement Work Plan that provides detail on the extent of the project and mitigation measures to prevent any release of ACM. Also photos of the pumphouse, and some of the pumps containing asbestos, are attached for information (Attachment 2). Currently, this project is scheduled to begin on April 2, 2001.

If you should have any questions or comments, please contact John Sands on (509) 372-2282.

Sincerely,

James D. Goodenough, Acting Director
Environmental Restoration Division

ERD:JPS

Attachments: As stated

cc w/attachs:
J. Price, Ecology
Admin Record, H6-08 (100-N Reactor Area)

cc w/o attachs:
K. A. Gano, BHI
J. J. McGuire, BHI

Attachment 1

087370

PAS
PERFORMANCE ABATEMENT SERVICES
SEATTLE OFFICE
422 South Forest Street • Seattle, WA 98134 • TEL: (206) 467-8733 • FAX: (206) 467-6307

087370

ASBESTOS ABATEMENT WORK PLAN

HANFORD ENVIRONMENTAL RESTORATION

100 N Area 181 N RIVER PUMPHOUSE
For
BECHTEL HANFORD, INC.

Prepared by:

Performance Abatement Services, Inc.
422 – S. Forest Street
Seattle, WA 98134
Telephone (206) 467-8733
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Reid Williams
Paul Hanway
AHERA Project Designer
#99-7153
Expires 1/20/02

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ASBESTOS ABATEMENT
1.0 INTRODUCTION

This hazardous materials abatement work plan presents the methods and procedures that Performance Abatement Services, Inc. (PAS) will employ in the removal of asbestos containing insulation on piping and screen filter housings.

2.0 SCOPE OF WORK

ASBESTOS WORK

- BHI to provide BCCA - Notice of Intent to Perform Asbestos Abatement 10 days prior to the start of work.
- Prepare the AAWP for BHI approval.
- Attend pre-construction (abatement) meeting.
- Submit training records and site-specific safety requirements.
- Mobilize and prepare regulated containment areas for the selective removal of ACM piping and equipment.
- Eliminate foreign objects or abatement water entering Columbia River per WAC 220-110 Hydraulic codes.
- Remove ACM insulation and small bore piping utilizing wrap and cut methods inside containment and glove bag methods outside containment.
- Remove ACM insulation on 4 ea 60" diameter elbows inside containment.
- Package ACM in double 6 mil labeled bags.
- Place ACM and pipes in 22 yard ERDF containers.
- Final clean and lock down all surfaces with penetrating encapsulant.
- Perform air monitoring during abatement activities.

2.1 WORK LOCATIONS

100 N Area - 181 N River Pump-house

3.0 DEFINITIONS

Amended water means water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

Asbestos-containing material (ACM) means any material containing more than 1% asbestos.

Authorized person means any person authorized by the employer and owners representative and required by work duties to be present in regulated areas.

Class I asbestos work means activities involving the removal of friable ACM, which is, in this case, thermal system insulation (TSI) or surfacing material. This includes, but is not limited to, the removal of asbestos pipe insulation, equipment insulation, spray-on fireproofing and textures.

Clean room means an uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

Competent person means, in addition to the definition in WAC 296-62-07728, one who is capable of identifying existing asbestos hazards in the workplace and selecting the

appropriate control strategy for asbestos exposure, and who has the authority to take prompt corrective measures to eliminate them as specified in WAC 296-62-0778. The competent person shall be certified as an asbestos supervisor in compliance with WAC 296-65-030(3) and 296-65-012 for Class I and Class II work, and for Class III and Class IV work involving 3 square feet or 3 linear feet or more of asbestos-containing material.

Disturbance means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM or PACM, no greater than the amount which can be contained in one standard size glove bag or waste bag in order to access a building or vessel component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Employee exposure means that exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

High-efficiency particulate air (HEPA) filter means a filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers mean aerodynamic diameter or larger.

Intact means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.

Negative initial exposure assessment means a demonstration by the employer (which complies with the criteria in WAC 296-62-07709) that employee exposure during an operation is expected to be consistently below the PELs.

PACM means "presumed asbestos-containing material."

Regulated area means an area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or can reasonably be expected to exceed the permissible exposure limit. Requirements for regulated areas are set out in WAC 296-62-07711.

Surfacing material means material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Thermal system insulation (TSI) means ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

Permissible exposure limits (PEL).

> **Time weighted average (TWA).** The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (0.1 f/cc) of air over an eight-hour time-weighted average (TWA).
>
> **Short Term Excursion limit (STEL).** The employer shall ensure that no employee is exposed to a short-term airborne concentration of asbestos in excess of 1.0 fiber

per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty minutes.

IDLH - Immediately Dangerous to Life and Health

BHI - Lock Out Tag Out (LOTO). Act of isolating an energy-emitting source and preventing re-energization prior to completion of work.

4.0 PREPARATION OF ENCLOSURES

PAS will utilize the following types of enclosures in preparation of the site for abatement activities in order to remove asbestos in a safe manner, control water, fiber release and insure adequately wet removal.

Regulated non-contained Areas – glove-bag, wrap + cut:

The regulated, non-contained area will be delineated by barrier tape and warning signs. Workers crossing into regulated areas will require respirators, disposable suits and training in ACM removal. 6 mil poly drop sheets shall be utilized as secondary protection to the glove-bag operation, in case of an unexpected breech or spill.

Negative Pressure Enclosure:

Negative Pressure Enclosure will be used in the abatement of the large diameter piping, Class 1 Pump equipment and screen housings in accordance with WAC-62-07751 Appendix 1.

Containment will be constructed under the supervision of the designated "competent person" around the immediate work area of the material to be removed. The work area will receive 6 Mil critical barriers taped and glued on openings such as ventilation grilles, slab cracks and openings. Walls will be re-enforced poly sheeting on existing walls or a framed enclosure. Floors in the enclosure will receive two layers of 6-mil flame retardant poly sheeting with lapped and staggered joints and turned up 12" at walls to insure water containment. Secondary sheeting shall be applied at existing guardrails to insure compliance with WAC 220-110.

Negative air HEPA filtration units will be utilized in the work area to assist in potential fiber control and to provide negative pressure of at least four air changes per hour. One unit and a backup will be used in each of these small work areas.

The supervisor will insure that -0.02 inches of water gauge is maintained within the enclosure. Air movement will be directed away from the workers performing work. The supervisor shall also maintain ongoing inspection of the integrity of the enclosure with emphasis on no water leakage.

Power will be provided by portable generator. At the end of each shift, all accumulated debris will be bagged out, working containments will be sealed airtight with separate poly seals, and power cut off. Work will be scheduled such that no containments remain active over the weekends.

A three chamber personnel decon and waste-load out will be constructed at a location connected to containment work areas, where feasible. The first chamber will be a clean

room for donning/doffing protective clothing. The second will be a shower room. The third a dirty suit removal room prior to showering. Shower water, hot and cold, will be provided and filtered through a 5 micron filter prior to drumming for disposal at a contractor approved location.
Water will be provided by 500 gallon portable water tank serviced by City Water Trucking.
Water will be drained from hoses as required to avoid freezing.

5.0 EXPOSURE ASSESSMENT

Initially, PAS will determine if our workers may be exposed to asbestos fibers in excess to TWA and excursion limits in accordance with WAC 296-62-07709. PAS has completed similar abatement projects consisting of pipe wrap removal in a regulated area with the same crew, similar control methods, work practices, environmental conditions, and has not exceeded PEL limits for various clients with data in the past 12 months.

PAS will conduct, under air monitoring requirements, personal samples representative of full shift TWA, and excursion sampling including one sample per job classification in each work area. PAS will establish a negative exposure assessment, although PAPR respirators are a minimum due to Class 1 friable TSI. **Outside perimeter air- monitoring will be conducted using hi-vol air monitoring pumps.**

6.0 SITE ACCESS

Worker and visitor procedures: The owner is hereby advised that asbestos has been determined to be a cancer-causing agent. The site is restricted to authorized visitors and workers. Asbestos danger tape and warning signs will demarcate work areas.

A warning sign will be at each entrance to the work area in accordance with WAC 296-62-07721:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING

ARE REQUIRED IN THIS AREA

7.0 ABATEMENT WORK METHODS

Glove-bag Removal Methods in Regulated Non-Contained Work Areas

Establish a regulated non-contained work area as described above in PREPARATION OF THE ENCLOSURE. Use a two-worker team to perform glove-bag activity. Install the glove-bag per manufacturer's instructions and guidelines. Insert wand from garden sprayer through water sleeve and spray pipe or fitting insulation to control dust. Carefully cut with

pre-placed tools a two-foot maximum section of pipe. Scrub exposed surface of the pipe with a brush. Seal exposed ends of insulation not removed with encapsulant. Remove tools and then collapse the bag with HEPA vacuum, twist and tape to secure. Remove glove-bag and place in proper disposal bag. Double, 6 mil wrap pipe and prepare for cutting.

Removal of ACM in Full Enclosure

Establish the enclosure as described above in PREPARATION OF ENCLOSURE. Wet the ACM to be removed to control dust. Carefully, cut or remove the ACM from the substrate surface and place into disposal bag. Do not allow materials to remain on floor, clean up disturbed materials and unnecessary water as soon as possible. Scrub the remaining substrate surface to remove ACM. Lockdown all surfaces with penetrating encapsulant and prepare for clearance testing. Wrap and cut piping in 6' lengths with band-saw or sawzall.

8.0 DECONTAMINATION

Removal of gross ACM is integral to the performance of abatement work and as such the procedures are specified in the appropriate work sections of this AAWP. Decontamination will proceed after the gross abatement is complete.

Perform a complete visual inspection of the entire work area to ensure that all visible ACM has been removed. Lock down all surfaces with penetrating encapsulant prior to clearance monitoring. Any small quantities of residual material found after the removal of poly sheeting will be removed by manual fleecing with HEPA vacuum.

9.0 DISPOSAL

All ACM material removed will be placed in 6 mil bags, properly labeled, tape closed. Pipe will be double 6 mil wrapped and labeled. Material will be placed in 22-yard boxes and transported from the work area to the **Environmental Restoration Disposal Facility (ERDF)** on trucks provided by others/owner. Material WSR manifesting and on-site waste tracking forms will be by BHI.

All pipe pieces and bagged asbestos will not exceed the 40# limit set by the ERDF supplemental waste acceptance criteria.

10.0 AIR MONITORING

PAS will provide initial monitoring to establish a negative exposure assessment. Thereafter, monitoring may be terminated for glove-bag operations consistently under the PEL. Initial and periodic monitoring will be performed for any new or significantly differing operations. Inside and outside area sampling will be performed for containment operations.
Monitoring shall be performed by the competent person with samples taken to PBS Inc. lab in Richland (AIHA accredited). Results shall be posted at job site each 24 hours.

11.0 RESPIRATORY / PPE PROTECTION

Table 1 from 29CFR 1910.1001 reflecting the level of respiratory protection required for specific ACM types will be used at a minimum for selection of respiratory protection.

Cartridge changes shall be made only in areas outside the area in which respiratory protection is being used. Respirators are to be cleaned at the end of every work shift and properly stored in plastic bags.

NIOSH approved half-face HEPA respirator are North models and may only be worn while working in a regulated area for ACM materials as designated in the table above. Half-face HEPA respirators may not be used in areas where exposure level is above 1 f/cc (fibers per cubic centimeter).

NIOSH approved full-face APR (air purifying respirator) HEPA respirator are North models and may only be worn while working in a regulated area for ACM materials as designated in the table above. Full-face APR HEPA respirators may not be used in areas where exposure level is above 5 f/cc.

NIOSH approved full-face PAPR (power air purifying respirator) HEPA respirator are Racal models and may be worn when working in a regulated area for ACM materials as designated in the table. Full-face PAPR HEPA respirators may not be used in areas where exposure level is above 10 f/cc.

NIOSH approved full face piece supplied-air respirator operated in a pressure - demand mode equipped with an auxiliary HEPA filter, (Type"C") respirators are both Survivaire and North models and may not be used in areas where exposure level is above 100 f/cc.

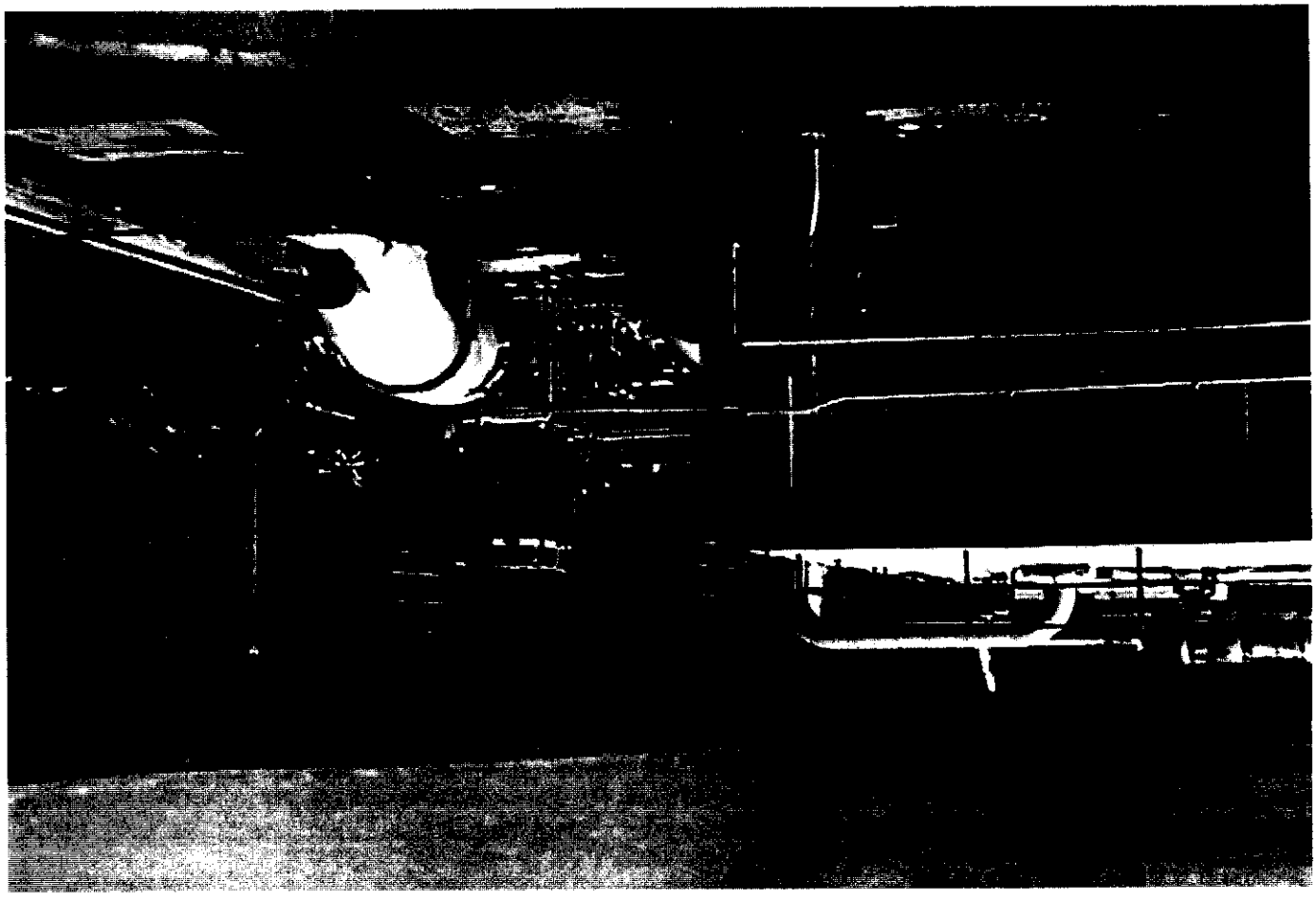
Requirements of applicable federal, state and local regulations shall be met or exceeded. Minimum procedures are to be followed regardless of the fiber concentration in the work areas. The following procedures are to be utilized to provide worker protection during the course of this project. Abatement personnel will be required to wear the appropriate personal protective equipment. The selection of the equipment will be based upon the asbestos activity, anticipated fiber count and appropriate safety considerations.

Workers performing asbestos abatement at the site entering a regulated area will wear at minimum a half face respirator equipped with high-efficiency particulate air (HEPA) filter cartridges. For non-RAD work, polypropylene non-woven fabric suits with hoods and booties are required to be worn. Additionally work boots, gloves, eye protection, back supports and hard hats are required for workers entering a PAS regulated work area.

The competent person shall inspect PPE and clothing daily. Any rips or tears shall be repaired or replaced immediately. Contaminated clothing shall be kept in sealed impermeable bags and disposed of as ACM.

Employees expected to wear air-purifying respiratory protection must be fit tested for the brand and model respirator they will be wearing during work. Fit tests are required to be performed in accordance with the OSHA/WAC standard every twelve months. All respiratory protection and training will follow OSHA Safety and Health Standards under 29 CFR 1910.134 and the Performance Abatement Services Respiratory Protection Program found in submittal.

12.0 WORKER CERTIFICATION



person will monitor the areas next to the work area to insure water and visible emissions are controlled.

ASBESTOS FIBER RELEASE EMERGENCY PROGRAM

In case fiber counts from personnel monitoring and/or area samples exceed maximum allowable levels, this program is to be implemented. Notify PAS immediately when one of the following levels is exceeded.

MAXIMUM ALLOWABLE FIBER COUNTS

AREA/PERSONNEL SAMPLE	MAX ALLOWABLE F/CC
Highest Personnel Sample (TWA)	0.10
Inside Regulated Area (Non-contained)	0.10
Inside Full Containment (30 Min. Excur.)	1.00
Outside Work Area	0.01
Negative Air Exhaust	0.01

PAS PERSONNEL

PAS Office	206.467-8733
PAS Site supervisor\ Ernie Crane	206-255-1988
PAS Project Designer\Paul Hanway - Mobile	206.571-6479
PAS Superintendent\Greg Nickell - Mobile	206.793-9875
PAS Project Manager\Reid Williams. - Mobile	206-423-7056

Be able to give specific information about the location and type of work being performed, the sample, a possible reason for the high level, and a suggestion as to how to correct the problem. Note this information on the Daily Log.

The Project Supervisor is responsible to carry out the following actions:

1. Stop the work in the sample area and have workers exit and follow normal decontamination procedures.
2. Record the specific information detailed above, including the date and time the fiber count was known, and who supplied the air monitoring data.
3. Inspect the containment and repair any holes or tears.
4. Inspect negative air equipment and replace filters.
5. Notify the Superintendent or Project Manager to inform them of the incident.
6. Take necessary corrective measures.

EMERGENCY PROCEDURES

1. Have worker(s) suit up, don appropriate respirator and enter containment.

2. Clean the work area where the high fiber count was taken with appropriate method (HEPA vac, wet wipe, etc.).

3. Review removal procedures with worker(s).

4. Supervise the worker to make sure the procedures are being followed.

5. Stop work when sample(s) has been taken; wait for results. If the sample is within tolerance, continue with removal work.

6. If this sample exceeds the maximum allowable limit, stop all work and review procedures with Project Manager and/or Superintendent and the Owner's Representative, if available. Mutually agree upon a course of action to correct the problem, and follow steps 1 thru 5.

14.0 RESPONSIBILITIES

The responsibility for completing the project in a timely manner will be delegated in the following manner: Project Manager (PM), General Superintendent (GS), Certified Asbestos Supervisor (CAS) and Certified Asbestos Worker (CAW).

The Branch Manager will be responsible for the overall coordination and supervision of the GS, PM, CAS, CAW and office support.

The Project Manager, Reid Williams, will be responsible for the submittals, plans, scheduling, and change orders and invoicing.

General Superintendent, Greg Nickell, is responsible for the supervision of day-to-day operations of PAS projects. Additionally, the GS is responsible for safety and training of all PAS workers.

CAS Site supervisor Ernie Crane has performed as on site supervisor and lead person on major abatement and demolition projects for the past eight years including HGP and WNP 1. Ernie brings a strong construction leadership background with a spirit of cooperation and abatement experience.

15.0 INTERFACE WITH OTHER TRADES

The interface of our activities with other construction trades will include BHI – Subcontract Technical Representative (STR).

Attachment 2